Listing of Claims:

1. (Previously Presented) An antenna, comprising:

a substrate; and

a conductive via stub formed in the substrate, wherein the conductive via stub is a radiating element.

2. (Original) The antenna of claim 1, further comprising a ground plane formed on a surface of the substrate.

3. (Original) The antenna of claim 1, wherein the antenna is an omni-directional antenna or a directional antenna.

4. (Original) The antenna of claim 2, further comprising an impedance matching network, wherein the impedance matching network comprises:

a insulation layer formed on the ground plane; and

a conductive layer formed on the insulation layer, wherein the conductive layer is patterned to form the impedance matching network.

5. (Original) The antenna of claim 4, wherein the impedance matching network comprises a transmission line.

6. (Original) The antenna of claim 1, wherein the antenna has a resonant frequency of about 20GHz or greater.

7. (Original) The antenna of claim 1, wherein the at least one radiating element further comprises a hat element formed on one end of the conductive via stub.

8. (Original) The antenna of claim 1, wherein the substrate comprises a printed circuit board.

9. (Original) The antenna of claim 1, wherein the substrate is comprised of a dielectric material or a semiconductor material.

10. (Original) A wireless device having an antenna as defined in claim 1.

11. (Original) An integrated circuit package comprising an antenna as defined in claim 1.

12. (Previously Presented) An integrated communications device, comprising:

an IC (integrated circuit) chip; and

an antenna bonded to the IC chip, the antenna comprising:

a substrate; and

a conductive via stub formed in the substrate, wherein the conductive via stub is a radiating element.

13. (Original) The device of claim 12, wherein the IC chip comprises a transceiver, a receiver, or a transmitter.

14. (Original) The device of claim 12, further comprising a plurality of patterned layers between the antenna and IC chip for providing electrical interconnections.

15. (Previously Presented) The device of claim 14, wherein the plurality of patterned layers comprise:

an insulation layer formed on a ground plane formed on a surface of the substrate of the antenna; and

a conductive layer formed on the insulation layer, wherein the conductive layer is patterned to form a plurality of contact pads or transmission lines.

16. (Original) The device of claim 15, wherein the insulation layer comprises a plurality of grounding vias formed therein, wherein the grounding vias provide ground connections between the IC chip and the ground plane of the antenna.

17. (Original) The device of claim 15, wherein the insulation layer comprises a feeding via formed therein, wherein the feeding via provides a connection to the radiating element of the antenna.

18. (Original) The device of claim 15, further comprising an impedance matching network that is formed from the plurality of patterned layers.

19. (Original) The device of claim 18, wherein the impedance matching network comprises a microstrip transmission line patterned on the conductive layer.

20. (Original) The device of claim 12, wherein the antenna is an omni-directional antenna or a directional antenna.

21 (Previously Presented) The device of claim 12, wherein the antenna has a resonant frequency of about 20GHz or greater.

22 (Previously Presented) The device of claim 12, wherein the at least one radiating element of the antenna further comprises a hat element formed on the conductive via stub opposite the ground plane.

23 (Previously Presented) A wireless device having an integrated device as defined in claim 12.

24. (Previously Presented) The device of claim 12, wherein the dielectric layer of the antenna acts as a cover for the integrated device.

25. (Previously Presented) The device of claim 12, wherein the antenna further comprises a ground plane formed on a surface of the substrate.

26. (Previously Presented) A method for constructing an antenna, the method comprising the steps of:

providing a substrate having a first surface and a second surface, the first and second surfaces defining planes that are substantially parallel; and

forming a conductive via stub in the substrate between the first and second surfaces, wherein the conductive via stub is a radiating element of the antenna.

27. (Previously Presented) The method of claim 26, further comprising:

depositing a first conductive layer on the first surface of the substrate; and

patterning the first conductive layer to form a ground plane that is electrically isolated from the conductive via stub.

28. (Previously Presented) The method of claim 27, further comprising patterning the first conductive layer to form a contact pad on an end portion of the conductive via stub, the contact pad being electrically isolated from the ground plane.

29. (Previously Presented) The method of claim 26, further comprising:

depositing a second conductive layer on the second surface of the substrate; and

patterning the second conductive layer to form a hat element that is electrically connected to an end portion of the conductive via stub.

30. (Previously Presented) The method of claim of claim 28, further comprising:

depositing an insulation layer over the patterned first conductive layer;

depositing a third conductive layer over the insulation layer; and

patterning the third conductive layer to form one or more contact pads, transmission lines, or both.

31. (Previously Presented) The method of claim 30, further comprising forming a plurality of grounding vias in the insulation layer, the grounding vias being electrically connected to the ground plane.

32. (Previously Presented) The method of claim 31, further comprising forming a solder ball on each grounding via and on one or more contact pads or transmission lines of the patterned third conductive layer.

33. (Previously Presented) The method of claim 32, further comprising bonding the antenna to an IC chip using one or more of the solder balls.

34. (Previously Presented) A method for constructing an integrated communications apparatus, comprising the steps of:

providing an antenna, the antenna comprising a substrate and a conductive via stub formed in the substrate, wherein the conductive via stub is a radiating element;

forming an interposer device; and

connecting an IC (integrated circuit) chip to the antenna using the interposer device.

35. (Previously Presented) The method of claim 34, wherein the antenna further comprises a ground plane formed on a surface of the substrate.

36. (Previously Presented) The method of claim 35, wherein forming an interposer device comprises:

depositing an insulation layer over the substrate of the antenna having the ground plane;

depositing a conductive layer over the insulation layer;

patterning the conductive layer to form one or more contact pads, transmission lines, or both;

forming a plurality of grounding vias in the insulation layer, the grounding vias being electrically connected to the ground plane; and

forming a feeding via in the insulation layer, the feeding via being electrically connected to the conductive via stub.

37. (Previously Presented) The method of claim 36, further comprising forming a solder ball on each grounding via and on one or more contact pads or transmission lines of the patterned third conductive layer.

38. (Previously Presented) The method of claim 37, wherein the step of connecting an IC chip to the antenna using the interposer device comprises bonding the antenna to the IC chip using one or more of the solder balls.